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526 Rec'd PCT/PTO 20 OCT

FORM PTO-1390 (REV 10-2000)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER: 6210/-TP

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (If known, see 37 CFR 1.5): 09/673719

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/SE00/00641	3 April 2000	3 April 2000

TITLE OF INVENTION: A System Operable to Identify and Access Information about a User

APPLICANT(S) FOR DO/EO/US: Broquist, Thomas and Eriksson, Lars

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).
4. ☒ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☒ is attached hereto (required only if not communicated by the International Bureau).
   b. ☐ has been communicated by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. ☐ are attached hereto (required only if not communicated by the International Bureau).
   b. ☐ have been communicated by the International Bureau.
   c. ☒ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 16 below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.
    ☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:

National examination procedures are to be postponed until the end of the 30 month period specified under PCT Art. 39(1).

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09/673719	PCT/SE00/00641	6210-TP

17. ☒ The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO **$1000.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO **$860.00**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO **$710.00**

International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) **$690.00**

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) **$100.00**

	CALCULATIONS PTO USE ONLY
ENTER APPROPRIATE BASIC FEE AMOUNT =	$ 1000

Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)). — $

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	
Total claims	- 20 =		X **$18.00**	$
Independent claims	- 3 =		X **$80.00**	$
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ **$270.00**	$
TOTAL OF ABOVE CALCULATIONS =				$
☒ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				$ - 500
SUBTOTAL =				$ 500
Processing fee of **$130.00** for furnishing the English translation later than ☐20 ☐30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$
TOTAL NATIONAL FEE =				$ 500
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +				$
TOTAL FEES ENCLOSED =				$ 500
			Amount to be refunded:	$
			charged:	$

a. ☐ A check in the amount of $_____ to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. 501249 in the amount of $ 500 to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☐ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 501249. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

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09/673719
526 Rec'd PCT/PTO 20 OCT 2000

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A SYSTEM OPERABLE TO IDENTIFY AND ACCESS INFORMATION ABOUT A USER

Technical field of the invention

The present invention relates in a first aspect to a system operable to identify and access information about a user of a distributed communication system.

In a second aspect the present invention relates to a method for identifying and accessing information about a user of a distributed communication system.

In a third aspect the present invention relates to at least one computer program product for identifying and accessing information about a user of a distributed communication system.

Description of related art

During the last years Internet has been the fastest growing media for communication and this expansion is expected to continue. One of the most common means to finance content and services in the Internet is by selling advertising space. In traditional media, advertising has been one of the primary sources of revenues and effort has always been focused on maximising the results from advertising.

Internet is not different when it comes to optimising advertising campaigns The goal for any party serving advertisement on the Internet is to be able to expose the correct advertisement to the Internet user in question. The problem with this is that it is relatively simple to be anonymous on the Internet and therefore it is normally only possible to prepare targeting of advertisement based on estimates given an Internet users previous visits on web-sites controlled by the advertisement serving party.

The technology to identity Internet users available today is based on the use of "cookies". A cookie is a data file stored at web- browser level. This technology has some serious disadvantages. First it is very easy for the Internet user to turn off the function to receive cookies. Second, it is the web-browser being identified, not the Internet user using the web-browser.

Today there is mainly one solution to the problem of identifying an Internet user. This solution is used today but has limitations. This solution is based on a

process of log-in where the Internet user is identified by a user name and authenticated by a password. By using a log-in process it is possible to determine which individual is using the web-browser at a given point in time on the specific web-site on which the user has logged in.

If it was possible to easily and safely identify an Internet user without the need for cookies or log-in procedures, a whole range of new possibilities should appear, such as the possibility to subsidise and/or charge activities or time spent on a specific web-site, the possibility to charge micro-amounts, or handling log-in without the Internet user being involved etc.

Summary

It is an object of the present invention to solve the above mentioned problems. The purpose of the invention is to be able to identify and access information about a user of a distributed communication system in real time without the users intervention whenever the user implicitly or explicitly requests a service from a service provider on e.g. the Internet.

According to the present invention there is provided in a first aspect a system operable to identify and access information about a user of a distributed communication system in real time without the users intervention. The system comprises at least one service device (108) operable to provide services to said user, and at least one access device operable to provide access to said distributed communication system. The system also comprises at least one control means connected to said at least one access device and to said at least one service device. The system also comprises a to said at least one access device connected identification device operable to identify an address of a specific user, and at least one storage device connected to said at least one control means. The system also comprises a to said at least one control means connected cache means operable to store mappings of said addresses and identifications of said users. The service device sends a request for information about a user requesting a service from said service device to said control means, which control means checks if said cache means contains an up to date identification. If said check gives an affirmative answer said control means fetches said information from said storage device and sends a reply comprising said information to said service device. On the other hand, if said check gives a negative answer said control means sends a request

for a real time identification of said address to said access device, which access device identifies said address with the aid of said identification device and sends said identification to said control means, which control means fetches said information from said storage device, and sends a reply comprising said information to said service device. The main advantage with the system according to the present invention is that it makes it easy and safe to identify a user without the need for cookies or log-in procedures.

Another object of the invention is to provide a method for identifying and accessing information about a user of a distributed communication system in real time without the users intervention. the method is performed with the aid of a system comprising at least one service device operable to provide services to said user, and at least one access device operable to provide access to said distributed communication system. The method comprises the following steps:

- that a user requests a service, implicitly or explicitly from a service device;
- that said service device sends a request for information about said user to a control means;
- said control means checks if a cache means connected to said control means contains an up to date identification:
- if said check gives an affirmative answer said control means fetches said information from a to said control means connected storage device, and sends a reply comprising said information to said service device; and
- if said check gives a negative answer said control means sends a request for a real time identification of an address of said user to said access device;
- said access device identifies said address with the aid of a to said access device connected identification device, and sends said identification to said control means;
- said control means fetches said information from a to said control means connected storage device, and sends a reply comprising said information to said service device. The main advantage with the method according to the present invention is that it becomes easy and safe to identify a user without the need for cookies or log-in procedures.

Another object of the invention is to provide at least one computer program product directly loadable into the internal memory of at least one digital computer. The at least one computer program product comprises software code por-

tions for performing the steps of the method according to the present invention, when said at least one product is/are run on said at least one computer. The main advantage with the computer program product(s) according to the present invention is that it becomes easy and safe to identify a user without the need for cookies or log-in procedures.

It should be emphasised that the term "comprises/comprising" when used in this specification is taken to specify the presence of stated features, steps or components but does not preclude the presence of one of more other features, integers, steps, components or groups thereof.

Embodiments of the invention will now be described with a reference to the accompanying drawings, in which:

Brief description of the drawings

Figure 1 shows a block diagram of a system operable to identify and access information about a user of a distributed communication system according to the present invention;

figure 2 shows another block diagram of the system in figure 1 in more detail;

figure 3 shows yet another block diagram of said system in figure 1, when said system is used in connection with the Internet;

figure 4 is a flow chart of a method for identifying and accessing information about a user of a distributed communication system in real time according to the present invention;

figure 5 is a flow chart of a method for updating of an internal cache means according to the present invention;

figure 6 is a flow chart of a method for handling the situation when said method according to figure 4 is performed in several geographical regions;

figure 7 is a flow chart of a method for performing a service according to the present invention;

figure 8 shows a schematic diagram of some computer program products according to the present invention.

Detailed description of embodiments

In figure 1 there is disclosed a block diagram of a system operable to identify and access information about a user of a distributed communication system according to the present invention. The distributed communication system can e.g. be the Internet, the Internet 2 or a digital TV-system, and comprises according to figure 1 three service devices 108 operable to provide services to different users, here disclosed at 109, in the form of three different users 109. The distributed communication system also comprises three access devices 105a, each operable to provide access to said distributed communication system. The system according to the present invention, limited by said broken line, comprises at least one control means 101; 103, here only one is disclosed, connected to said three access devices 105a and to said three service devices 108. The system according to the resent invention also comprises at least one storage device 102; 104, here only one is disclosed, connected to said at least one control means 101; 103. The distributed communication system can also comprise at least one attach means 107a, here three are disclosed, each operable to attach additional information to identifications. If said distributed communication system is the Internet, said service device 108 is an online service provider, said access device 105a is an Internet access provider (IAP) 105a, and said attach means 107a is an additional supplier 107a. A service provider is in this context any party providing an Internet based service. Said control means 101; 103 is in this context a server 101; 103.

In figure 2 there is disclosed another block diagram of the system disclosed in figure 1 in more detail. The aim with this figure is to illustrate that the system according to the present invention can be divided into a number of geographical regions. In figure 2 said system is divided into three different geographical regions. Said division is performed based on the distance between the individual control means 101; 103 in the system according to the present invention. In a fist region, encircled by the broken line, there is disclosed a central control means 101a connected to a central storage device 102a, two access devices 105a connected to said central control means 101a. In said first region there are also disclosed two regional control means 103a connected to said central control means 101a. Each said regional control means 103a is also connected to a regional storage device 104a. Each geographical region can also comprise a supplier means 106a for handling a number of attach means 107a. Each attach means 107a is connected to said supplier means 106a and to said central control means 101a. In

this figure 2 there is also disclosed a second geographical region comprising a central control means 101b, a central storage device 102b connected to said central control means 101b. This region also comprises a regional control means 103b connected to said central control means 101b. At last, said second region also comprises a regional storage device 104b connected to said regional control means 103b. As is apparent from figure 2 this second region does not comprise any access device, supplier means or attach means. It is noted that there can be more than one region comprising the same parts as in the first region. In this figure 2 there is also disclosed a third geographical region comprising a central control means 101c, a central storage device 102c connected to said central control means 101c. This third region also comprises a supplier means 106c and three attach means 107c, wherein each attach means 107c is connected to said supplier means 106c and to said central control means 101c. Of course there are connections between said different regions. In figure 2 there is disclosed a connection between said central control means 101a and said central control means 101b. There is also a connection between said central control means 101a and said regional control means 103b and a connection between said central control means 101b and said regional control means 103a. There is also a connection between said supplier means 106a and said supplier means 106c. In connection with figure 6 there is described the function of the system disclosed in figure 2.

In figure 3 there is disclosed yet another block diagram of said system in figure 1, when said system is used in connection with the Internet. The same reference signs in the different figures represent the same structural elements and are not described again. The Internet is schematically shown in the middle of the figure in the form of a "cloud". The system also comprises a first interface unit 110 connected to said service device 108, which first interface unit 110 also is connected to two different control means 101; 103. The system also comprises a second interface unit 112 connected to said control means 101; 103 and to two access devices 105; 105a. Said control means 101; 103 are also connected to said storage device 102; 104. Said interface units can e.g. be Application programming Interfaces (API). The system also comprises a cache means 111 connected to said control means 101; 103, which cache means 111 is operable to store mappings of said addresses and identifications for said users 109. The system also comprises an identification device 113 operable to identify an address of a specific

user 109. Said identification device 113 is connected to said access device 105a. Said identification device 113 is a device that finds a mapping between an address and an identifier for the user 109 currently using said address. This information may be extracted from a storage device connected to said access provider 105a, which the access provider 105a always updates with information on which address said access provider 105a assigns to said user 109. This storage device can e.g. be a data base. In connection with figure 4 there is described the function of the system disclosed in figure 3.

In figure 4 there is disclosed a flow chart of a method for identifying and accessing information about a user of a distributed communication system in real time according to the present invention. The method is performed without the users 109 intervention. Said method is also performed with the aid of a system, e.g. disclosed in figure 3, comprising at least one service device 108 operable to provide services to said users 109, and at least one access device 105a operable to provide access to said distributed communication system. The method begins at block 200. At block 202 the method continues with the step: that a user 109 requests a service A (see e.g. figure 3), implicitly or explicitly from a server device 108. The method continues at block 204 with the step that said service device 108 sends a request B, C1 for additional information about said user 109 to a control means 101; 103. At block 206 the method continues with the step that said control means 101; 103 checks if said cache means 111 contains an up to date identification. If said check gives an affirmative answer the method continues at block 208 with the step that said control means 101; 103 fetches said information from said storage device 102; 104, and sends a reply comprising said information to said service device 108. Said information fetched by said control means 101; 103 is connected to said identification from said cache means 111. If said check gives a negative answer the method continues at block 210 with the step that said control means 101; 103 sends a request D, see e.g. figure 3, for a real time identification of said address of said user 109 to said access device 105a. At step 212 the method continues with the step that said access device 105a identifies said address with the aid of said identification device 113, and sends said identification to said control means 101; 103. The method continues, at block 214, with the step that said control means 101; 103 fetches said information from said storage device

102; 104, and sends a reply comprising said information to said service device 108. The method is completed at block 216.

The request B, se figure 3, contains the current IP-address assigned to the Internet user 109. The request B is forwarded by said first interface unit 110 to a request C1. The first interface unit 110 decides which server 101; 103 to send the request C1 to based on the geographical location of said server 101; 103 and the geographic location of said access means 105a said Internet user 109 is connected to. Said first interface unit 110 also decides whether to optimise this selection based on speed or reliability depending on the type of the request. The second interface unit 112 selects the correct access means 105a based on the IP-address in the request C1 and forwards the request E1, still containing the IP-address assigned to the Internet user 109, to the access means 105a. The access means 105a identifies the IP-address in request E1 by the use of said identification device 113, and sends an identification back to said server 101; 103. This is illustrated in figure 3 with H1 and I. Said server 101; 103 updates said cache means 111 with the mapping between the IP-address in request C1 and the identification delivered from the access means 105a. The server 101; 103 fetches information connected to the identification delivered from said access means 105a from said storage device 102; 104, and sends a reply to said service device 108. This is illustrated in figure 3 with L1 and M. The server 101; 103 finally logs the request.

In figure 5 there is disclosed a flow chart of a method for updating of an internal cache means according to the present invention. The method begins at block 240. At block 242 the method continues with the step that said server 101; 103 updates said cache means 111 with the mapping between said IP-address and said identification for each request C1, and sends a reply (H1 and I) in correspondence thereto. The method continues at block 244 with the step that said server 101; 103 receives a mapping between an IP-address and an identification by querying said access means 105a, or directly from another server 101; 103 when the other server 101; 103 has received a mapping according to step 242. The next step, at block 246, consists of storing said mapping in an internal cache means 111 together with a timestamp. This step is performed by said server 101; 103. At block 248 said method continues with the step that the server 101; 103 iterates through the currently stored mappings between a IP address and an identi-

fication in said cache means 111, and validates the entries if a certain time has elapsed since the entry was last validated according to the stored timestamp. The validation is performed by querying said access means 105a for an identification of the IP-address. At block 250 the question is asked if the IP-address is valid? An entity in said cache means 111 is valid if the access device 105a which "is the owner" of the address can verify that the identity still is associated with said address, by the use of said identification device 113. If the answer is affirmative the timestamp on said entry is updated as in block 252. On the contrary, if the answer is negative, i.e. the IP-address is invalid, the cache entry is removed as in block 254. The method is completed at block 256. It is noted that the steps according to this figure 5 is a part of the methods according to the present invention.

In figure 6 there is disclosed a flow chart of a method for handling the situation when said method according to figure 4 is performed in several geographical regions. The method begins at block 270. At block 272 the method continues with the step that said central server 101a downloads mappings between Internet access account information and an identifier from the access means 105a within a first geographic region. The downloaded mapping data is stored in said central storage device 102a. This can be done in real time, as soon as said access means 105a receives updated account information or new accounts, or on a regular basis by day or any other period of time with all new information since the last update. The method continues at block 274 with the step that said supplier server 106a downloads mappings between Internet account information and an identifier from said access means 105a within said first region in the same way as described at block 272. The supplier server 106a distributes the information to the attach means 107a in said first region. The attach means 107a attach additional information to the identification. Said attach means 107a sends the additional information together with the identification to said central server 101a. It is also possible that an attach means 107a receives information from an access means 105a directly, attach additional information and sends this to said central server 101a. The additional information is stored in said central storage device 102a. The next step, at block 276, consists of distributing, with the aid of said central server 101a, said mappings to said regional servers 103a and said mappings are stored in said regional storage device 104a. At block 278 said method continues with the step that said central server 101a distributes said mappings to central servers 101b in

other geographic regions if there are service means 108 requesting the information from regional servers 103b or the central server 101b in this other region. The distributed mappings are stored in said central storage device 102b for said other region. The next step, at block 280, consists of distributing, with the aid of said central server 101a, said mappings to regional servers 103b in other geographic regions if there are service means 108 in that region requesting the information from those regional servers 103b. The method is completed at block 282. It is noted that the steps according to this figure 6 is a part of the method according to the present invention.

In figure 7 there is disclosed a flow chart of a method for performing a service according to the present invention. With this service the invention can be used to enable a service means 108 to sponsor Internet users 109 when they visit the service means 108 or use services provided by said service means 108. The method begins at block 300. At block 302 the method continues with the step that an Internet user 109 connects A (see e.g. figure 3) to a service means 108. The method continues at block 304 with the step that said service means 108 makes a request, through said first interface unit 110 for a real time identification of said online Internet user 109 to check whether the Internet user 109 is allowed to get sponsoring. If the answer is negative, i.e. if the Internet user 109 not is allowed to be sponsored, the method continues at block 306 with the step that said service means 108 displays a message to the Internet user 109 explaining how the Internet user 109 can get hold of this service. If the answer on the contrary is affirmative, i.e. the Internet user 109 is allowed to be sponsored, the method continues at block 308 with the step that said service means 108 sends a logon request through said first interface unit 110. Said first interface unit 110 redirects the request to a server 101; 103 with an indication of which access means 105a the Internet user 109 is using. The server 101; 103 logs the exact time the logon request was made together with the identification of the Internet user 109, where the identification is derived in the same manner as previously described. At block 310 the method continues with the step that said service device 108 verifies that the Internet user 109 is actively using the services of said service device 108 and sends update requests through the first interface unit 110. Said first interface unit 110 redirects said request to the server 101; 103 which logs the exact time the update request was made together with the identification of the Internet user 109.

The next step, at block 312, consists of the following: said service device 108 notes when the Internet user 109 is not using said services any longer and sends a logoff request through said first interface unit 110. Said first interface unit 110 redirects the request to the server 101; 103, which logs the exact time the logoff request was made together with the identification of the Internet user 109. The method continues, at block 314, with the step that the log, on a regular basis, is parsed to calculate the amount of time a specific Internet user 109 has used a service at a specific service means 108. At block 316 the method continues with the step that said service means 108 will be billed for this time and said access means 105a of the corresponding Internet user 109 will be credited and will reduce the Internet users 109 bill with the corresponding amount. The method is completed at block 318. It is to be noted that the steps according to this figure 7 is a part of the method according to the present invention.

In this realization of the invention, information about an Internet user 109 is provided by one or several information suppliers 107a which all have a relationship to the information supplier 105a also being the party providing the Internet access to the Internet user 109. The information provided is compiled and stored in advance in storage (102 or 104) or compiled in real time in cooperation with the Internet access provider 105a. The compiled and stored information is stored in such a way that it is impossible to associate an IP-address with the stored information without the help of an Internet access provider 105a which also is the party distributing the IP-address to the Internet user 109.

When the Internet user 109 implicitly or explicitly requests a service A from a online service provider 108 this online service provider 108 has the possibility to requests part of, or complete information about the Internet user 109 requesting the service. The online service provider 108 will post the request to a device 110 where the device decides where to forward the request. As a result the online service provider 108 receive parts of, or complete information about the Internet user 109 requesting the service.

The retrieved information will be used for controlling parts of, or the complete content of a service provided by the online service provider 108. The retrieved information can also be used to collect statistics about requests to a specific service provided by the online service provider 108.

In this realization of the invention, information about an Internet user 109 is provided by one or several information suppliers 107a which all have a relationship to the information supplier 105a also being the party providing the Internet access to the Internet user 109. The information provided is compiled and stored in advance in storage (102 or 104) or compiled in real time in cooperation with the Internet access provider 105a. The compiled and stored information is stored in such a way that it is impossible to associate an IP-address with the stored information without the help of an Internet access provider 105a which also is the party distributing the IP-address to the Internet user 109.

When the Internet user 109 implicitly or explicitly requests a service A from a online service provider 108 this online service provider 108 has the possibility to request a result from a matching process performed by the server (101 or 103) and request a match with the data retrieved given a specific Internet user 109 requesting a service from the online service provider 108. The online service provider 108 can also specify criteria's to match with within the request for match.

The result of the requested match will be used for controlling parts of, or the complete content of a service provided by the online service provider 108, or more specific, be used to target information or advertisement given the result from the requested match.

The invention will as described so far only be able to identify an individual Internet user 109 defined as being the holder of an Internet subscription. This introduces a problem to identify the physical individual who is actually using the Internet connection N and requesting services A. For example, several members in a family may use one computer, one modem, one telephone line and one Internet subscription for all their Internet usage.

To improve the quality and the possibility to target information in more detail, a small piece of software enables the physical Internet user to select between different profiles (eViduals). These profiles are stored in said storage device 102; 104 in the same way as information in the already described examples. Each said profile has an own identity. The software communicates the currently selected eViduals to the server (101 or 103).

There is also a device (specifically a web-site) enabling physical Internet users to maintain their eVidual profile. This device also enables physical Internet users to select their eVidual regardless of their present location. The facility for

physical Internet users to maintain their eVidual profiles permits the QualityAds Network to relay user defined data to online service providers 108 on demand.

On usage of this is that online service providers 108 will be able to personalize content and appearance to suit Internet users 109 based on individual preferences. Another possible use is to provide automated log-in-procedures to services provided by online service providers 108.

Not described in the drawings is the possibility for online service providers 108 to let Internet users 109 interact with servers (101 or 103). This interaction can be used to provide a possibility for an Internet user 109 to give feedback to an actin taken by the online service provider given the result m or a request B to server (101 or 103). The feedback from an Internet user 109 is stored in storage (102 or 104) in order to improve the quality of future requests B to server (101 or 103). The feedback can be handled in real time. In this scenario the Internet user 109 acts as an information supplier 107.

In figure 8 there is disclosed a schematic diagram of some computer program products according to the present invention. There is disclosed n different digital computer 100_1, ..., 100_n, wherein n is an integer. There is also disclosed n different computer program products 102_1, ..., 102_n, here showed in the form of compact discs. The different computer program products 102_1, ..., 102_n are directly loadable into the internal memory of the different digital computers 100_1, ..., 100_n. Each computer program product 102_1, ..., 102_n, comprises software code portions for performing some or all the steps of figure 4 when the product(s) 102_1, ..., 102_n is/are run on said computer(s) 100_1, ..., 100_n. Said computer program products 102_1, ..., 102_n, can e.g. be in the form of floppy disks, RAM disks, magnetic tapes, opto magnetic disks or any other suitable products.

The invention is not limited to the embodiments described in the foregoing. It will be obvious that many different modifications are possible within the scope of the following claims.

CLAIMS

1. A system operable to identify and access information about a user (109) of a distributed communication system in real time without the users intervention, wherein the system comprises at least one service device (108) operable to provide services to said user (109), at least one access device (105a) operable to provide access to said distributed communication system, **characterized in** that said system also comprises at least one control means (101; 103) connected to said at least one access device (105a) and to said at least one service device (108), a to said at least one access device (105a) connected identification device (113) operable to identifying an address of a specific user, at least one storage device (102; 104) connected to said at least one control means (101; 103), and a to said at least one control means (101; 103) connected cache means (111) operable to store mappings of said addresses and identifications for said users (109), wherein said service device (108) sends a request for information about a user requesting a service from said service device (108) to said control means (101; 103), which control means (101; 103) checks if said cache means contains an up to date identification, and if said check gives an affirmative answer said control means (101; 103) fetches said information from said storage device (102; 104) and sends a reply comprising said information to said service device (108), or if said check gives a negative answer said control means (101; 103) sends a request for a real time identification of said address to said access device (105a), which access device (105a) identifies said address with the aid of said identification device (113) and sends said identification to said control means (101; 103), which control means (101; 103) fetches said information from said storage device (102; 104) and sends a reply comprising said information to said service device (108).

2. A system operable to identify and access information about a user (109) of a distributed communication system according to Claim 1, **characterized in** that said system is divided into a number of geographical regions based on the distance between different geographical regions.

3. A system operable to identify and access information about a user (109) of a distributed communication system according to Claim 2, **characterized in** that

said distance is measured by the delay between individual control means (101; 103) in said system.

4. A system operable to identify and access information about a user (109) of a distributed communication system according to any one of Claims 2 – 3, **characterized in** that each geographical region comprises a central control means (101), a central storage device (102), and in that each geographical region can comprise at least one regional control means (103), at least on e regional storage device (104), and at least one access device (105a).

5. A system operable to identify and access information about a user (109) of a distributed communication system according to Claim 4, **characterized in** that each geographical region also can comprise a supplier means (106a) operable to distribute information, and at least one attach means (107a) operable to attach additional information to identifications, wherein said supplier means (106a) is connected to said at least one access device (105a) and to said at least one attach means (107a).

6. A system operable to identify and access information about a user (109) of a distributed communication system according to any one of Claims 1 – 5, **characterized in** that each service device (108) is connected to a first interface unit (110), which in turn is connected to said at least one control means (101; 103), in that each control means (101; 103) is connected to a second interface unit (112), which in turn is connected to said at least one access device (105a), and in that each control means (101; 103) also is connected to said at least one storage device (102; 104).

7. A system operable to identity and access information about a user (109) of a distributed communication system according to any one of Claims 1 – 6, **characterized in** that said distributed communication system is the Internet.

8. A system operable to identity and access information about a user (109) of a distributed communication system according to any one of Claims 1 – 7, **characterized in** that each service device (108) is an online service provider

(108), each access device (105a) is an Internet access provider (105a), and each control means (101; 103) is a server (101; 103).

9. A system operable to identify and access information about a user (109) of a distributed communication system according to any one of Claims 5 – 8, **characterized in** that each supplier means (106a) is a first supplier server (106a), and each attach means (107a) is a second supplier server (107a).

10. A system operable to identify and access information about a user (109) of a distributed communication system according to any one of Claims 7- 9, **characterized in** that said address of a user (109) is an IP-address.

11. A method for identifying and accessing information about a user (109) of a distributed communication system in real time without the users intervention, wherein said method is performed with the aid of a system comprising at least one service device (108) operable to provide services to said user (109), and at least one access device (105a) operable to provide access to said distributed communication system, said method comprises the steps of:

- that a user (109) requests a service (A), implicitly of explicitly, from a service device (108);
- that said service device (108) sends a request for additional information about said user (109) to a control means (101; 103);
- said control means (101, 103) checks if a cache means (111) connected to said control means (101; 103) contains an up to date identification;
- if said check gives an affirmative answer said control means (101; 103) fetches said information from a to said control means (101; 103) connected storage device (102; 104) and sends a reply comprising said information to said service device (108); or
- if said check gives a negative answer said control means (101, 103) sends a request for a real time identification of an address of said user (109) to said access device (105a);
- said access device (105a) identifies said address with the aid of a to said access device (105a) connected identification device (113), and sends said identification to said control means (101; 103);

- said control means (101; 103) fetches said information from a to said control means (101; 103) connected storage device (102; 104), and sends a reply comprising said information to said service device (108).

12. A method for identifying and accessing information about a user (109) of a distributed communication system according to Claim 11, **characterized in** that said system also comprises a to said each service device (108) connected, first interface unit (110), and a to said each control means (101; 103) connected, second interface unit (112), wherein the method also comprises the following steps:

- said request sent from said service device (108) is forwarded by said first interface unit (110), which first interface unit (110) decides which control means (101; 103) to send said request to; and
- said request sent from said control means (101; 103) for a real time identification of an address of said user (109) is forwarded by said second interface unit (112) which selects which access device (105a) to send said request to.

13. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 11 – 12, **characterized in** that said system is divided into a number of geographical regions based on the distance between different geographical regions.

14. A method for identification and accessing information about a user (109) of a distributed communication system according to Claim 13, **characterized in** that said distance is measured by the delay between individual control means (101; 103) in said system.

15. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 13 – 14, **characterized in** that each geographical region comprises a central control means (101), a central storage device (102), and in that each geographical region can comprise at least one regional control means (103), at least one regional storage device (104), at least one access device (105a), a supplier means (106a) operable to distribute information, and at least one attach means (107a) operable to attach additional information to identifications, wherein said supplier means (106a) is

connected to said at least one access device (105a) and to said at least one attach means (107a).

16. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 11 – 15, **characterized in** that said method also comprises the following steps:

- said control means (101; 103) updates said cache means (111) with a mapping between said address and an identification for each said request forwarded by said first interface unit (110);
- said control means (101; 103) receives a mapping between said address and said identification by querying said access device (105a), or directly from another control means (101; 103);
- said control means (101; 103) stores said mapping together with a time stamp in an internal cache means (111);
- said control means (101; 103) iterates through the currently stored mappings between said address and said identification in said internal cache means (111) if a predetermined time has elapsed since the stored time stamp for said entry; and
- if said address is invalid, which is verified by querying said access device 105a, said entry in said internal cache means (111) is removed; or
- if said address is valid, which is verified by querying said access device 105a, said entry is updated with a new time stamp.

17. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims15 – 16, **characterized in** that said method also comprises the following steps:

- said central control means (101), within a first geographical region, downloads mappings between access account information and an identifier from said access device (105a), which mapping data is stored in said central storage device (102) within said first geographical region;
- said supplier means (106a) within said first geographical region downloads mappings between access account information and an identifier from said access device (105a) within said first geographical region;

- said supplier means (106a) within said first geographical region distributes said information and identifier to said attach means (107a) in said first region, which attach means (107a) attach additional information to said identifier;
- said attach means (107a) in said first region sends the new total information and identifier to said central control means (101) within said first region; and
- said new total information and identifier are stored in said central storage device (102) in said first region.

18. A method for identification and accessing information about a user (109) of a distributed communication system according to Claim 17, **characterized in** that said method also comprises the steps of:

- said central control means (101) distributes said mapping data to said regional control means (103); and
- said mapping data are stored in said regional storage device (104).

19. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 15 – 18, **characterized in** that said method also comprises the steps of:

- said central control means (101) in said first region distributes said mapping data to central control means (101) in another geographical region if there are service devices (108) requesting said information from said regional control means (103) or said central control means (101) in another region than said first region; and
- said mappings data are stored in said central storage device (102) in said another region.

20. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 15 – 19, **characterized in** that said method also comprises the steps of:

- said central control means (101) in said first region distributes said mapping data to regional control means (103) in other geographical regions if there are service devices (108) in another region than said first region requesting said information from sad regional control means (103).

21. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 15 – 20, **characterized in** that said method also comprises the step of:

- that said user (109) can interact with said control means (101; 103).

22. A method for identification and accessing information about a user (109) of a distributed communication system according to Claim 12, **characterized in** that said interaction is comprised of said user (109) is giving feedback to an action taken by said service device (108), wherein said feedback is stored in said storage device (102; 104).

23. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 11 – 22, **characterized in** that said distributed communication system is the Internet.

24. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 11 – 23, **characterized in** that each service device (108) is an online service provider (108), each access device (105a) is an Internet access provider (105a), and each control means (101; 103) is a server (101; 103).

25. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 15 – 24, **characterized in** that each supplier means (106a) is a first supplier server (106a), and each attach means (107a) is a second supplier server (107a).

26. A method for identification and accessing information about a user (109) of a distributed communication system according to any one of Claims 15 - 25 **characterized in** that said address of a user (109) is an IP-address.

27. At least one computer program product (102_1, ..., 102_n) directly loadable into the internal memory of at least one digital computer (100_1, ..., 100_n), comprising software code portions for performing the steps of claim 11 when said at least one product (102_1, ..., 102_n) is/are run on said at least one computer (100_1, ..., 100_n).

ABSTRACT

The present invention relates to a system operable to identify and access information about a user (109) of a distributed communication system. The system comprises at least one service device (108), and at least one access device (105a) operable to provide access to said distributed communication system. The system also comprises at least one control means (101; 103) connected to said at least one access device (105a) and to said at least one service device (108), a to said at least one access device (105a) connected identification device (113) operable to identify an address of a specific user (109). The system also comprises at least one storage device (102; 104) connected to said at least one control means (101; 103), and a to said at least one control means (101; 103) connected cache means (111) operable to store mappings of said addresses and identifications for said users (109).

(Figure 3)

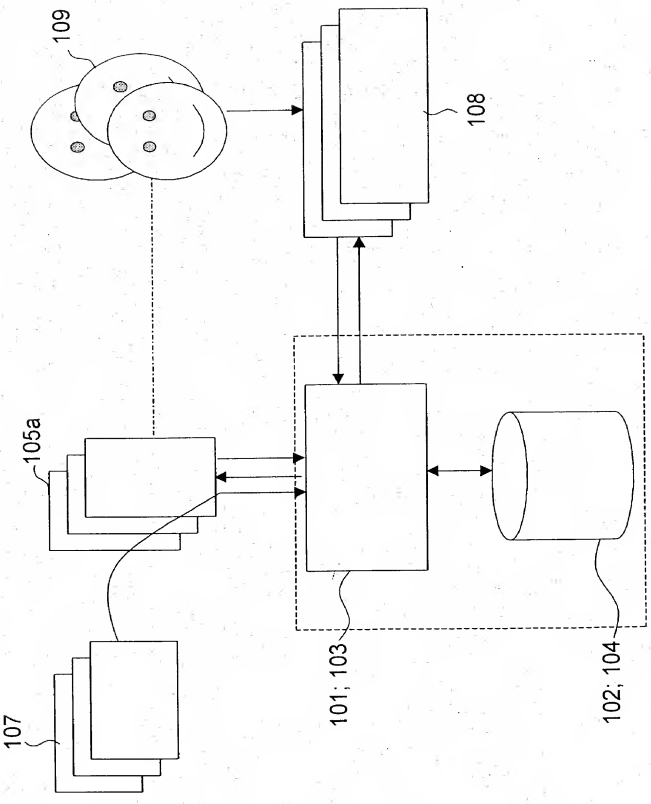

Fig. 1

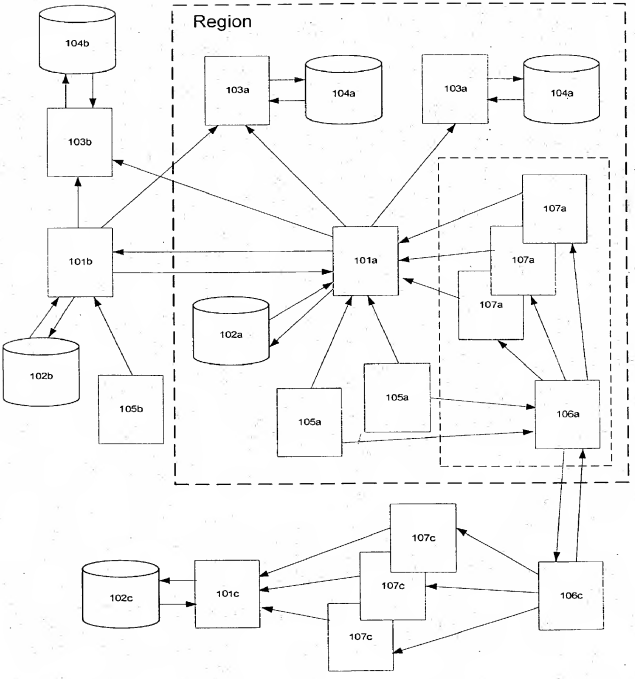
Region
104b
103a
104a
103a
104a
103b
107a
101b
101a
107a
107a
102a
102b
105b
105a
105a
106a
107c
102c
101c
107c
106c
107c

Fig.2

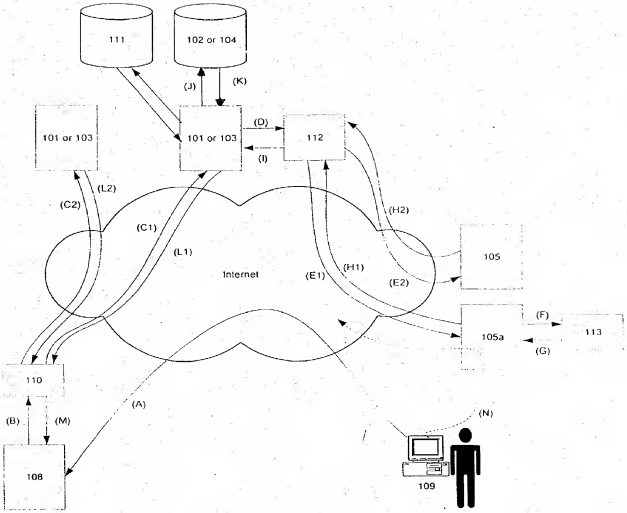
111
102 or 104
(J)
(K)
101 or 103
101 or 103
(D)
(I)
112
(L2)
(C2)
(C1)
(L1)
Internet
(H2)
(H1)
(E1)
(E2)
105
105a
(F)
(G)
113
110
(B)
(M)
(A)
108
(N)
109

Fig.3

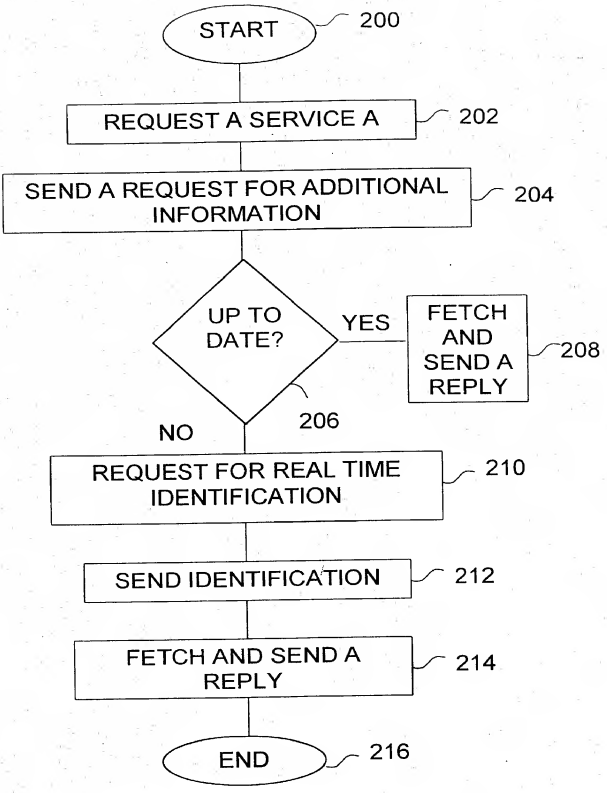
START
200
REQUEST A SERVICE A
202
SEND A REQUEST FOR ADDITIONAL INFORMATION
204
UP TO DATE?
YES
FETCH AND SEND A REPLY
208
206
NO
REQUEST FOR REAL TIME IDENTIFICATION
210
SEND IDENTIFICATION
212
FETCH AND SEND A REPLY
214
END
216

Fig. 4

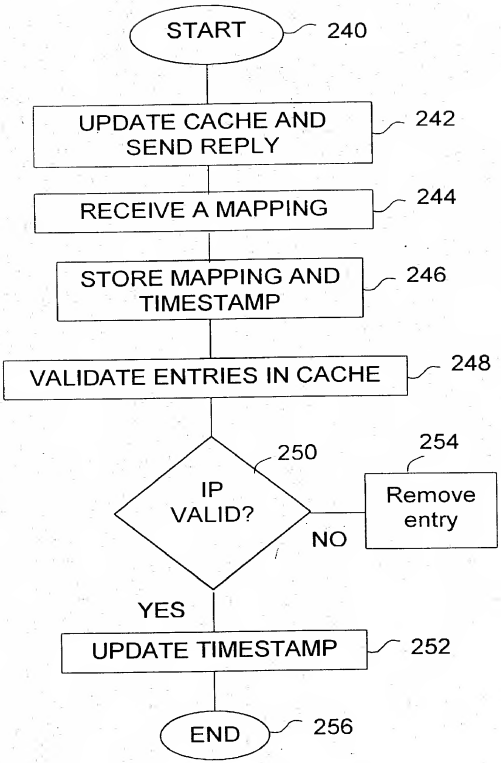
START
240
UPDATE CACHE AND SEND REPLY
242
RECEIVE A MAPPING
244
STORE MAPPING AND TIMESTAMP
246
VALIDATE ENTRIES IN CACHE
248
IP VALID?
250
NO
254
Remove entry
YES
UPDATE TIMESTAMP
252
END
256

Fig. 5

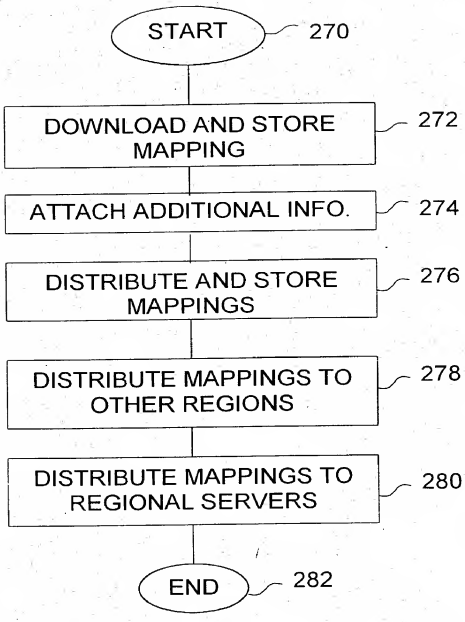
START
270
DOWNLOAD AND STORE MAPPING
272
ATTACH ADDITIONAL INFO.
274
DISTRIBUTE AND STORE MAPPINGS
276
DISTRIBUTE MAPPINGS TO OTHER REGIONS
278
DISTRIBUTE MAPPINGS TO REGIONAL SERVERS
280
END
282

Fig. 6

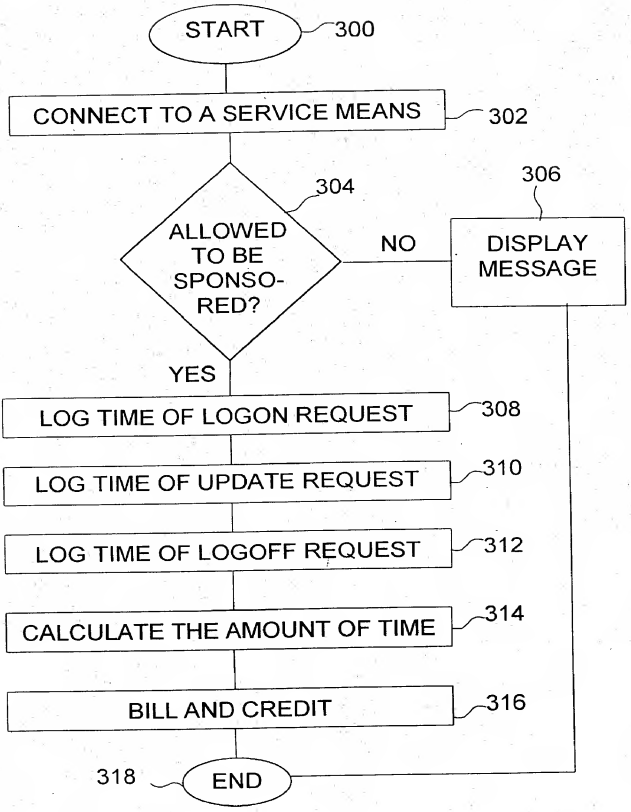
START
300
CONNECT TO A SERVICE MEANS
302
304
ALLOWED TO BE SPONSO-RED?
NO
306
DISPLAY MESSAGE
YES
LOG TIME OF LOGON REQUEST
308
LOG TIME OF UPDATE REQUEST
310
LOG TIME OF LOGOFF REQUEST
312
CALCULATE THE AMOUNT OF TIME
314
BILL AND CREDIT
316
318
END

Fig. 7

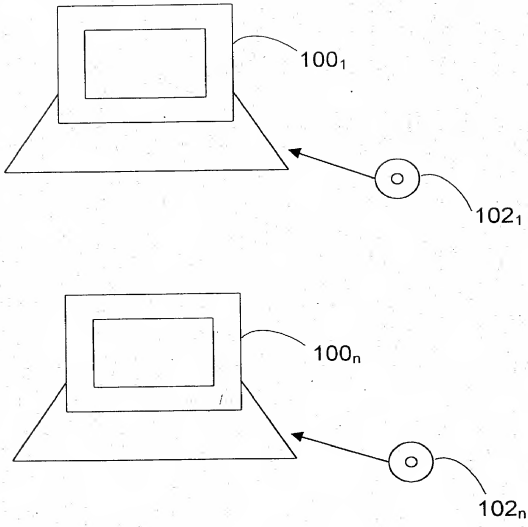

Fig. 8

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted with Initial Filing **OR** ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	62101
First Named Inventor	BROQUIST Thomas
COMPLETE IF KNOWN	
Application Number	/
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

A System Operable to Identify and Access Information About a User

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) 04/03/2000 as United States Application Number or PCT International Application Number PCT/SE00/00641 and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	
		☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

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DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

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OR
☒ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Timothy Platt	43,003		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number or Bar Code Label [ ] *OR* ☒ Correspondence address below

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname
Thomas	Broquist

Inventor's Signature						Date	
Residence: City	Stocksund	State		Country	Sweden	Citizenship	SE
Post Office Address	Andstigen 169						
Post Office Address							
City	Stock-sund	State		ZIP	SE-182 70	Country	Sweden

☒ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

(2)

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ADDITIONAL INVENTOR(S)
Supplemental Sheet
Page 1 of 1

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any)]		Family Name or Surname				
2 - ∞ Lars		Eriksson				
Inventor's Signature					**Date**	
Residence: City	Tyresö SEX	**State**		**Country** Sweden	**Citizenship**	SE
Post Office Address	Sandvägen 14 B					
Post Office Address						
City	Tyresö	**State**		**ZIP** SE-13550	**Country**	Sweden

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any)]		Family Name or Surname				
Inventor's Signature					**Date**	
Residence: City		**State**		**Country**	**Citizenship**	
Post Office Address						
Post Office Address						
City		**State**		**ZIP**	**Country**	

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor					
Given Name (first and middle [if any)]		Family Name or Surname				
Inventor's Signature					**Date**	
Residence: City		**State**		**Country**	**Citizenship**	
Post Office Address						
Post Office Address						
City		**State**		**ZIP**	**Country**	

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